

Japanese Publication for Unexamined Patent
Application No. 266586/1991 (*Tokukaihei* 3-266586)

A. Relevance of the Above-identified Document

This document has relevance to claims 1, 2, 39 and 40 of the present application.

B. Translation of the Relevant Passages of the Document

[PRIOR ART]

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In the device shown in Figure 5, the respective RGB signals of the input color video signal are first inputted to a six colors division circuit 61.

As an example of the conventional six colors division circuit 61, the following explains the extraction circuit shown in Figure 8, that divides an R signal. First, the comparison circuit 81 compares the levels of an R-G signal and an R-B signal of the original signal, and the selector 82 selects the lower level signal. Further, the clipping circuit 83 removes a minus component from the selected signal. The resulting signal is outputted as an R' signal.

Accordingly, as shown in Figure 9, when the color video signal has RGB signals at a ratio of 0.8:1.0:0.2, the six colors division circuit 61 divides the signal in a

manner equal to the following formula.

$$0.8R+1.0G+0.2B=0.2(R+G+B)+0.6(R+G)+0.2G$$

where

(R+G+B): white,

(R+G): Ye',

G: G'

According to the formula, it is regarded that the video signal contains Ye' and G' at a ratio of 0.6:0.2. Then, color compensation original color signals R', G' and B' at a ratio of 0.0:0.2:0.0, and color compensation complementary color signals Cy', Ma' and Ye' at a ratio of 0.0:0.6:0.0 are outputted.

Similarly, when the color video signal has RGB signals at a ratio of 0.8:1.0:0.2, six colors division circuit 61 outputs a color compensation original color signal R' at a ratio of 0.4, and other color compensation signals at a ratio of 0, according to the following formula.

$$0.8R+0.4G+0.4B=0.4(R+G+B)+0.4R$$

Next, the color compensation original color signals R', G' and B' and the color compensation complementary color signals Cy', Ma' and Ye' thus outputted from the six colors division circuit 61 are supplied to the multiplication circuits 62 through 65, respectively, to be multiplied by predetermined compensation coefficients K1 through K12. Thereafter, the respective signals are

added/subtracted to/from the original RGB signals by the addition/subtraction circuits 66 through 74, and outputted as modified RGB signals through the predefined compensation.

Here, as one example, with reference to the Maxwell's dichromatic view shown in Figure 6, the following explains the purport of the foregoing calculation in which the Y_e' signal is multiplied by the coefficient K_1 , and added to the R signal and subtracted from the G signal. In the calculation, the position of the Y_e in the dichromatic view is moved to the direction denoted by the solid line (1) so that the hue of the Y_e is changed in an amount of the coefficient K_1 .

Further, in the calculation in which of the Y_e' signal is multiplied by the coefficient K_2 , and added to the R signal and to the G signal, the position of the Y_e in Figure 8 is moved to the direction denoted by the broken line (2), so that the saturation of the Y_e is changed in an amount of the coefficient K_2 .

In the same manner, the color compensation original color signals R' , G' and B' and the color compensation complementary color signals Cy' , Ma' may be adjusted in hue and saturation by being multiplied by predetermined compensation coefficients K_3 through K_{12} , and added/subtracted to/from the R and G signals. In this

way, the device of Figure 5 enables individual adjustment in hue and saturation of the respective colors R, G, B, Cy Ma and Ye, as shown in Table 1.

Table 1

COMPENSATED COLOR	SATURATION/HUE	METHOD
R	SATURATION	$K1 \times R$ IS ADDED TO R
	HUE	$K4 \times R$ IS ADDED TO R SUBTRACTED FROM G
G	SATURATION	$K2 \times G$ IS ADDED TO G
	HUE	$K5 \times G$ IS ADDED TO R SUBTRACTED FROM B
B	SATURATION	$K3 \times B$ IS ADDED TO B
	HUE	$K6 \times B$ IS ADDED TO G SUBTRACTED FROM R
Ye	SATURATION	$K7 \times Ye$ IS ADDED TO R AND G
	HUE	$K10 \times Ye$ IS ADDED TO R SUBTRACTED FROM G
Cy	SATURATION	$K8 \times Cy$ IS ADDED TO G AND B
	HUE	$K11 \times Cy$ IS ADDED TO G SUBTRACTED FROM B
Ma	SATURATION	$K9 \times Ma$ IS ADDED TO B AND R
	HUE	$K12 \times Ma$ IS ADDED TO B SUBTRACTED FROM R

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審査請求 未請求 請求項の数 1 (全9頁)

⑭ 発明の名称 カラー映像信号の色補正回路

⑮ 特 願 平2-64371

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(57)【要約】

〔目的〕乗算器と加算器とに供給すべき信号をRGB間の色差信号の極性に依りて選択するようにして、乗算器と加算器の個数の増加を抑え小型化を図る。

〔構成〕レジスタ18～23には原色の彩度調整用及び色相調整用係数が格納され、レジスタ24～29には補色信号に対応した彩度調整用及び色相調整用係数が格納される。そしてレジスタ18～29に格納してある係数が例えば乗算回路14、15により乗算され、その結果と、反転回路30の出力とがセレクタ12に供給されると、セレクタ12が、色判定回路5によるR色という判定結果で、乗算回路14の出力を加算回路33に切換え、入力映像信号のR信号に加算し、乗算回路15の出力と反転回路30の出力とを加算回路34、35に切換えて、入力映像信号のB信号とG信号に加算させる。このようにして8個の加減算回路と、4個の乗算回路を用いるだけで、6色独立した色補正が可能となり、小型化される。

【カラー映像信号色補正回路乗算器加算器供給
信号RGB色差信号極性選択個数増加抑え小型化
レジスタ原色彩度調整色相調整係数格納補色
信号対応乗算回路乗算反転回路出力選択器色
判定回路色判定結果加算回路切換入力映像信
号R信号加算B信号G信号8個加減算回路4個6色
独立色補正可能】